

# AVIATION

*The Oldest American Aeronautical Magazine*

AUGUST 29, 1927

Issued Weekly

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Air photo of the Oakland Airport taken Aug. 12 and showing all the Dole Derby entries

VOLUME  
XXIII

## SPECIAL FEATURES

GERMAN AIR TRANSPORT  
THE WESTERN AIR EXPRESS  
DURALUMIN—DEFECTS AND FAILURES

NUMBER  
9

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*Winner of**Dole Derby*

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and LT. WM. V. DAVIS  
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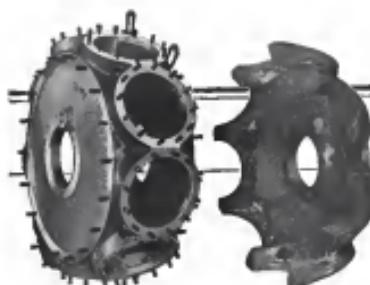
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Here we can give but the brief description of the plane. However, in our new booklet of more than thirty pages—"The New Era of Transportation"—you can learn what this advanced ship really is, and what it has done. We suggest you write for this booklet. It contains, in addition, much valuable information on forming and operating airlines—information based on experience on the Ford airlines. And any other information you wish on technical, experimental, construction and operation work of Ford ships will be gladly furnished.

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### *With the Editor*

During the months of May, June and July, 1927, the Western Air Express, Inc., which operates between San Francisco City, U. S. and Los Angeles, Calif., transported 45,723 lbs of mail for a total distance of 109,460 mi. and was paid \$480,179.08. A study of the monthly figures of this company, that appeared on page 418 of last week's issue of AVIATION will show that the number of pounds of mail carried and the amount received increased with each month although during the month of June the company flew over 4,000 miles less than it did during May and July.

On page 514 of this issue is to be found an article on the Western Air Express written by Earl D. Osburn. The article is the result of a recent visit to the company's headquarters and flight over the route. It describes in a most interesting way the company's operations, its personnel and the territory it flies.

# CONSISTENCY!

The Lindbergh, Chamberlin, Maitland and Byrd flights had one common factor—the Wright Whirlwind Engine.

The consistent selection of this engine by these world-famous fliers—as well as by many others whose page in history is not yet written—is equalled only by the flawless operation of the engine, whose uniform performance had played a major part in these epochal events.

This choice was not haphazard. It was logically based upon the actual performance of the engine itself. Its record of over 4,633,000 miles flown during 1926, in civil and military service, is alone sufficient to justify universal confidence.



**W R I G H T**  
AERONAUTICAL CORPORATION  
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**AVIATION**

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## Wings

A TENSELY interesting and highly instructive participation of the military side of aeronautics is to be found in the new Paramount motion production "Wings." Much has been said and written about war in the air. Some of which was actual war, and some of which were the dreams of a highly imaginative author. But practically all of which was different indeed from the layman's idea of what war in the air means. Here, Wings, he is able to see his dreams just how they were spoken, shown, or proven in sequence. Not only does he see how the armada napalmes the sky above the clouds but also how he "squadrons" the troops on the ground. To the man in the street and the popular pilot, Wings is pictorial history, and to the gasses who were over there, it is like living the old days over again.

From the planes that appear in the picture are some of the present day types, located, together with their personnel, through the courtesy of the U. S. Army Air Corps, which played no small part in making the production the success that it is. And when the war pilot sees the long take off in the familiar "Spit" and two advanced later "dog fighters" in a "Vimy," "Hornet," or sees the hero seen in "Goliath," he is in France, where in truth it is now. Post-war Martin bomber that goes down in flames in "Hammer and Thrust" of 8 R is not Caudell and Pethick, etc., but his experiences are the all talk of half flight, half exhibition and gripes the arms of his seat in suspense just as much as this hero who is struggling next to him and learning all about the art of aerial warfare for the first time.

The Famous Playtex-Lucky Corp., and all other organizations, as well as individuals who assisted in making Wings, are to be congratulated for their splendid efforts and results. During the last year the people of this country have learned a lot about the value of a airplane in times of peace, and with the Corp's help, even a shrewd observer of defense with such bad day it is almost certain that the non-flying public should have the opportunity to obtain some idea as to the true value of the airplane in time of conflict.

## The Pacific Tragedy

THE RECENT loss of the lives of men in connection with the Dole San Francisco Hawaii flight is having a sobering effect on the public's sentimental view. It is agreed that the fact that they have not taken definite before. However, fatalities have been accepted as a recognized part of aviation progress. This has been particularly true in the fields of airmail and naval flying. But with conscientious amount it was hoped that this phase would gradually become less accentuated in

the public mind. It is easy to criticize and blame after a misfortune occurs. But when the maker of the airmen that have possessed all the great trans-seas flights bears a venture as "short" it is time for serious thought. The Department of Commerce aeronautics branch did all it could to prevent a catastrophe by preventing colors and other impedimenta. But they were overruled. In the future, when large financial rewards are offered, it is like to be hoped that adequate safeguards will be a part of the requirements.

## The Skilled Mechanic

NOW THAT THIS business of building airplanes has reached the point where factory standardization and regularity of production is evident, or if not, will be in the very near future, the services of the skilled aircraft mechanic can be used in experimentation and development work alone.

A days ago, when the airplane were built individually and on a small basis, the details of construction were often left to the judgment of the skilled mechanic. And for such work he was highly paid as it required a high degree of ingenuity and ability. But with the manufacture of mass-produced flying tools and production methods, the same quality of product can be obtained at a lower labor cost.

However, there is always the need for improvement, and as such is easily possible through practical research and experimentation, the skilled mechanic is just as much in need now as before, if not more so, due to the progress of aeronautical engineering. And added to that there is the matter of repairs. That itself is a work that demands expert ability if it is to be done right. So, after all, the airmen as far as airmen is damage proof and it is the quality of repairs that adds or detracts from its performance.

## Good Planes Make Good Pilots

THESE WAS a time when the small amount of capital needed in the purchase of your own airplane allowed most anyone to own a plane without little financial loss. To see and expect this condition still continues to exist for there is no sign of preventing second hand planes being sold at a low price. Before they are finally scrapped. Where there are comparatively small financial losses involved in case of crashes, survivors had then can still suffice to operate, but with new and higher priced planes the situation changes. Poor pilots are unable to operate good planes for the simple reason that they are too expensive to replace if they are cracked up. The better the plane the better the pilot must be.

# Travel Air "Woolaroc" Wins Dole Derby

*Groebel and Davis Complete Pacific Flight First in 26 Hr. 17 Min. 33 Sec., While Jensen and Schalter Fly Briscoe Monoplane "Aloha" to Second Place in 28 Hr. 16 Min.*

**F**IRST PRIZE of \$30,000 of the \$80,000 prize money offered by James D. Dole of Hawaii for a nonstop flight from the American mainland to Hawaii was won by Arthur G. Groebel and Louis W. Davis, U. S. S., pilot and co-pilot of the Travel Air monoplane "Woolaroc" (Wright Whirlwind) when they landed their plane at Wheeler Field, Oahu, 28 hr. 17 min. 33 sec. after taking off from the Orlando Airport, Calif. Second place, the remaining \$50,000 was won by Merlin Jensen, pilot, and Paul Schalter, navigator, when they landed their Briscoe monoplane "Aloha" (Wright Whirlwind) on Wheeler Field at 2:23 P.M. (Hawaii time) after a nonstop flight of 30 hr. 16 min. Eight planes started in the race from Los Angeles Islands. Two crashed on the runway of Goldfield Airport, from whence all the competitors made their stops. Three forced to land and one of these restarted two hours later.

Of those who crashed, Mac Lorraine Irving suffered a cut on his head, Leon Maxson Goldfarb injured a toe and John E. Moore was unscathed; Louis Kenneth C. Howland escaped unhurt.

One plane, an Alz King sterilized "Sky of Drama," was ruled out of the event shortly before the start of the race. Capt. C. W. Smidt of the field committee announcing the plane's positive capacity was responsible for the abrupt



The "Woolaroc" just after the take off and on the way to Hawaii.

under the committee rules, which held a 15 per cent margin of fuel to be carried.

The crew was dressed in the uniforms. Bennett Groebel who had position number one, left the starting line well within the minute allowed him by the field committee. The second plane, Goldfarb's biplane, started as soon as the first. At 4:45 A.M. it became too dark to continue so Groebel had passed that point. In fact, Groebel's Travel Air had already landed before a slant went up "together with a smash" and the thudding plane appeared ahead of a cloud of dust.

Groebel seemed to be having difficulty lifting the plane's tail and had circled over three times before the plane came up into flying position. She then rose slightly and fell back into the treetops, landing on one wheel and staying motionless. This was re-acted again and later he said the end of his left wing touched the ground. The plane then veered sharply to the other direction, however, the right wing down and the plane ground to a standstill. According to the report, the Lockheed plane piloted by J. W. Frest was closest to the right, only about half of the way down the runway.

The triplane piloted by J. W. Frest was rolled out to the starting line but Frest was held back while the



(L-R) Arthur G. Groebel, pilot; Louis W. Davis, co-pilot; and an unnamed member of the crew of the Travel Air monoplane "Woolaroc".

the plane did not project into the runway, the next plane was called to the start.

This was the Briscoe monoplane piloted by Irving. He started at 32:00 P.M. (Hawaii time) and had been having trouble in getting the engine to start and located around the wrecker plane. Observers said they heard several times that Mac Lorraine Irving's plane lifted slightly from the ground, each time a little higher, before it "cut the grass" and slowed the plane to roll to the end of the runway. The crash scene was re-enacted with the addition, this time, of sounds of machinegun fire from the Briscoe biplane crashing down the field in unison.



The "Aloha" heading out over the Pacific en route to Wheeler Field, Hawaii.

The plane was reported undamaged, despite a rather savage fight with the wind. Irving landed in the starting line as an amateur and his plane was towed out of the way. He had to keep stable to get the plane into the air and that he would try again.

The Lockheed plane piloted by J. W. Frest was rolled out to the starting line but Frest was held back while the

PRACTICE WHAT YOU PREACH — USE THE AIR MAIL

plane was cleaned again. Although there were nearly 300 passengers in duty status hundreds of persons crowded in getting over or under the fences and gathering around the plane, in order to see it to be maneuvered around the field. The spectators had also gathered around the field at 12:20 P.M. and the sun was rising slightly before Frest was given the signal that had been given to him when he passed through the Galina gate, clearance thought as ten minutes had been given.

He took the air at about 3,000 ft. and was 200 ft. up at the end of the runway. Then he started to the left, over the fence. Frest had to make a series of turns to clear a nest of snakes. Please believe in a very effort to keep up.

The Briscoe biplane, with Pilot A. F. Peckin, was away two minutes later and the crew stretched and pulled their hoses, the soaring efforts of the two drivers having been broken down by the driving flight of so many planes taking off at once. But, as luck turned, besides Louis J. B. Krieger, the navigator, Miss Mildred Doran, the only woman and the only passenger in the plane.

The pilot got into the air at before the 3,000 ft. mark. Peckin had "shut the plane off" instead of pulling it up as

planned in a very workmanlike manner, something of a feat since he had not dumped any gasoline at Peckin did before landing the Briscoe. He had some back, he said, because the engine had been running so much during the day that the motor was hot and the oil was thicker. He had been saving the gas for the return flight.

The plane was then given a series of turns to the right.

These planes were hurriedly cleared from the runway and Mac Lorraine Irving followed straight at 1:00 P.M. He leveled several times the first few of about 2,500 ft. and seemed to climb rapidly for a second or two. As he passed the 3,000 ft. mark he was about 15 ft. up and the sun gave him a great glow. Almost at once, however, his engine's rear wheel dropped and the plane was seen to be settling. The left wing up caught the ground and it started to roll, struck rough ground, skidded down and smashed up the right wing. The plane then went down in an flames. Irving presently climbed out of the cockpit, naked except for a cap on one shoulder.

The damaged plane hung well to one side of the runway. The Briscoe was rolled out and warmed up again and, at 2:33 P.M., took off a second time.

It took off easily, as before, and at about 200 ft. altitude Peckin leveled off and turned west.

With the plane in a steady climb, Peckin and his navigator, A. F. Peckin, with the field still remained at the field until 4 P.M., hoping to effect repairs which would let him attempt the race once more, but gave up if for the time being. His last word to Krieger was that he would try again not only for Honolulu but for Hickam, his plane being unable to make the distance for the return flight.

At the present writing no word has been heard from Jack Peckin and Gordon Scott in their "Golden Eagle" or Miss Mildred Doran, J. A. Peckin and Louis J. B. Krieger, U. S. N., who took off at 1:00 P.M. "Miss Doran" was the only woman to enter the race and all four have been held for their safety although both of naval and government ships are watching the waters between the mainland and the Hawaiian Islands. Krieger, who looks like agout the next morning in due measure.

## Valuable Aid Rendered Dole Derby Fliers

Aiding those who gave considerable assistance to the pilots in their efforts to win the \$80,000 Dole Derby, were Captain MacLean and Higdonberger, and Smith and Ervin, all of whom had flown the course successfully.

Higdonberger was also adviser, and consulted, by fed information of the Wright Aerocraft Corp. With few exceptions the Wright Whirlwind engines were the power plant used by all the fliers in the race and the aid rendered by the Wright factory men was of great value.

The Pioneer Instrument Co. is another concern that rendered every kind of service to navigator W. P. Robinson, Los Angeles representative, worked day and night reading the maps and maps and charts to help him to get the best possible use out of some of the newer and less experienced navigator aids. He was assisted in his work by J. B. Fries, field engineer of the Pioneer Instrument Co.

The Travel Air monoplane "Woolaroc," that carried Arthur C. Groebel and Louis W. Davis, U. S. N., is first plane was equipped with a new Pioner magnetic compass and other instruments.

The Briscoe monoplane "Aloha" in which Merlin Jensen and Paul Schalter was second plane was equipped with a Pioneer compass indicator and other standard Pioneer instruments.

## B. Russell Shaw New Airport Consultant

B. Russell Shaw, the new airport consultant of the Pacific Air Lines has agreed to act as chief consultant at the new airport, which will be built about a mile from the Southern Pacific tracks, in St. Louis, where he will conduct consulting work as consultant. Mr. Shaw was formerly chairman of the Contest Committee of the S.A.A. and as such was in charge of the air races conducted.

(L-R) Paul Schalter, pilot and Merlin Jensen, navigator and pilot of the Briscoe monoplane "Aloha" which was second.

For professionals had done. The red, white and blue plane was followed down the field by the others of the course. It climbed fast and was higher at the end of the field than any of the others.

Merlin Jensen with the unusual Briscoe monoplane was number one. Observers at the upper end of the field predicted he was going to be the first to cross the finish line and did not only a heroic and fast but did not get nearly into the air far enough thousand feet. Jensen "hoisted her off" but was in the air for the plane do her own climbing. Photographs showed this plane in flying position, but low as she left the ground and continued out to the left and did not rise to the right of the field.

Art Groebel's Travel Air—the winner—made a smooth and may run down the field and took off readily at 2,000 ft. The plane had climbed to about 300 ft. before reaching the end of the field. The Groebel, with Capt. William J. Ervin as the pilot's cockpit, got away at 12:35 P.M. His plane followed on the right of the raceway and was the first to cross the finish line. He took a long run to get into the air, estimated at 4,000 ft.

Two planes were seen heading back toward the field and the crowd presently made them out as the Briscoe and Groebel's Travel Air. The Briscoe came in on the southern side of the field. It had hardly landed before the Travel Air, also coming in from the northern side, was seen to be landing. A few minutes later a third plane was seen returning. It was the Briscoe monoplane. Captain Ervin landed the better





The view of the Tyrolean Alps as seen from the Tschirg.

Even now, some of the Alpenverein trekkers who had left their "Euros parket," which remained, in aged oak, simple and complete constructions, are reaching this plateau now. The first to do so were the two Swiss who had been flying for five minutes before even alighted, and by then three and a half hours, a half hour past given a welcome opportunity to have one of the smallest meals that can be had at every German airport.

The airport at Dornbirn is typical of the smaller flying fields that are being built all over Germany to the east as well as those of the great German aeronautic air parks. New buildings and improvements appear to be in progress of construction at all times. At some fields only the grading had been completed and a small shack was used for office and rest rooms. Some even did not have hangars. The next stage was a number of hangars, each adequate for one or two aircraft. This was followed by a number of hangars of a parking center where people of the city could come and take pride in their airport. Roads will follow, so that in a few years airports will truly be transportation terminals, having all the facilities now provided by railroads and steamships.

#### Cologne, the Western Air Center of Germany

The short flight from Berlin to Cologne passes over Westphalia, which has an altitude of all its own, because of its mountainous character. The highest peaks here can be seen for miles to the north and south. Ships of all sizes carry the commerce of this district to the sea and probably no river in the World, with the possible exception of the Thames, has the commercial activity of this great German city. Landing at the Cologne airport, the first thing done was to get a car to the town, but the airport staff, which is one of the most amiable in Germany, is so efficient, intent to keep the air traveler satisfied, that we left for Southern Germany.

The trip from Berlin to Cologne takes four and a half hours and when the weather is fair gives an excellent idea of the district that has now become known as the Ruhr. Cologne is the largest city in the entire series of German cities. Here planes leave for Paris, London, Amsterdam, Rotterdam, Hamburg and all cities to the east in Germany. Here may be seen the French planes of the Farman Company, the English Handley-Pages of the Imperial Airways and all types of German planes, from large four-engine Junkers to the small single engine planes.

Of course, no visitor to this district will wish to stop at

this interesting city, containing not only the cathedral, but many medieval buildings. It has only recently come under its own control, as was the other section of the British occupation. The old Wiesbaden Treaty, however, still holds, requiring for the average passenger in sufficient for a day's air journey. In that time, except for the long-distance traveler, the fares can be charged so completely that it can be considered as an established practice that those who use aircraft for traveling to Europe usually plan to fly in the morning and return in the afternoon for eight-eleven purposes. On, they increase the order.

#### From Cologne to Munich

The morning flight from Cologne to Munich was made in a four-passenger Junkers monoplane, equipped with a Hispano-Suiza engine. As Mr. Gresham and I had reservations at a hotel, a delicate situation arose when these German business men wished to make the trip as far as Frankfurt. This difficulty was solved by allowing us to sit with the pilot, an opportunity which is always welcomed by untrained passengers.

In the smaller passenger planes, the possibility of air sickness is much greater than in the large multi-engined types. Those who are affected by the rolling and jolting of airplanes, either do not fly or have methods of their own to combat the effect. We therefore took the route via the western air travel. Mr. Gresham, who had flown nearly 5,000 miles in Europe, had never been able to board a seat of top kind without discomfort. On one or two of the earlier flights he had some very unpleasant experiences. But while flying with Helmut Wronsky, the attorney and Major Wronsky, the wife of the son of Count von Luck-Hausen, and wife Regissons, the wife of the son of Count von Luck-Hausen, were the ticketholders, which proved to be thoroughly afflictions. A few minutes before our trip, the density taken in a glass of water. It is tasteless and it contains no intestinal narcotics. It produces a partial paralyzation of the nerves of the stomach and causes drowsiness after a period of fifteen to twenty minutes. It appears to have the effect of making the nose more sensitive, so that there is a greater desire for nose breathing, which usually results in sleep, so major how rough the trip. The first effect seems to wear off within an hour, but after that there is another consciousness from the action of the plane is felt. At first it was thought that such powerful effects could only be produced by hot air blowing down, as the motion would be experienced. Neither one of these theories was realized, for whenever the propellers of tempo-

air were apparent, the remedy was used with most satisfactory results. At the end of such journeys, a meal would be taken and the man would be able to resume his reading and the wind was strong from the south, the compasses usually provided the stimulus needed to take-off into threatening weather. It was observed that the passenger made full of passengers as soon as the weather was bad, and if positive steps can be taken from an aeronautical ground, another of the obstacles at present in the way of air travel will have been surmounted.

#### The Rhine Valley From the Air

We took off at the Cologne flying field at noon, offset to the west and up to a height of 10,000 feet. The Rhine Gorge was the best example of Gothic architecture in existence. It has taken 700 years for it to reach a present state of perfection and ten magnificently spaced gorges over 300 ft. from the waterlevel of the Rhine. Looking down upon the great width of flying buttresses and towering arches, the engineering skill of the Romans is clearly apparent. The cathedral is one of the few that can be viewed from above, with its much elevation as from the ground. Traversing back from the Rhine for several miles is that modern city of Dusseldorf, which still retains its ancient streets and estimates buildings of early German architecture. We also flew over the old city of Cologne, which gives every evidence of age to the lower fifth century. After we flew over the center of the city, the spectator bridges that cross the Rhine gave a further impression of the solidity of German engineering construction as well as the architectural attractiveness that surrounds all points of interest.

Indeed, the Rhine flies past the castles and chateaux which line its slopes, the direct route from Frankfurt to Berlin. It is unfortunate that the former trip is not made by air today, as it would give an unequalled view of perhaps the most famous scenic journey in the World. As we were flying in a land plane, and the District is very hilly, it was decided to take the road to the south of the Rhine, and well below Cologne, so as to approach the mountains with the understanding memory along the banks. Our course paralleled the river at about ten miles and wide. Soon, the famous German university town, could be seen in the distance, the trip which the Roman emperors were making, was typical of German country roads.

Silently after leaving Cologne, it was observed that for

taking the nearly impossible short. The approach pilot, who was in charge, but who later could not be deciphered, said we had landed, but the open cockpit in front of the small Junkers single-engine plane is so well designed that goggles were not needed, nor was it even necessary to wear an oxygen. Taking machine from Frankfurt, we flew over Homburg, the well-known Spa, one of the most attractive of the numerous spas of the Rhine. At first the altitude was over 2,000 ft., but about 1,000 ft. and a magnificently views of several old castles which were built on the peaks of the Thuringian Forest.

It took only an hour and a half to fly to Frankfurt, and as the other passengers left us there I left my seat with the others to go to a restaurant. The Rhine Gorge, the Alsatian forest, the waterfalls clearly for its commanding features, and its beautiful location on the river Main. From Frankfurt, two smooth air routes are available, one which leads north to Mannheim, Strasburg, Baden and over the Black Forest to Berlin, Switzerland, where construction can be seen on the new airport. The other leads to Munich. When we took the direct route from Frankfurt to Munich, and after leaving Elchingen, we flew over rolling, wild country, crossed by many winding roads and smaller rivers. The entire trip is so enchanting that it is very difficult to trace the route necessarily on the map. Flying at 3,000 ft., we passed over the beautiful little city of Ingolstadt, which has a fine church. On the right side of the small river near Ingolstadt, which gives every evidence of age to the ninth century. The twisting coulees are almost as those of a canal. It appears to be situated out of the surface of the ground. The other is the crossing of the world-famous Blue Danube, which on the German map is at first overlooked because of the German name, but which is the Rhine in Germany, the Moselle, and which we were in flying on crossing right through Austria, Hungary, Bohemia, Jugo-Slavia, clear to the Black Sea, was disappearing in an upper stage. Its famous blue is almost green, and the patches of sand, which are seen in places, do not give the impression of appearance that can be found in the streams of the Transylvanian Alps. At one point, as we flew over the rare, old historical city of Augsburg, which on the Middle Ages was the home of the rock and powdered marlsocks who installed large interlocking tools. This is the district of Germany where the old prehistoric German architecture is to be seen at its best.

It would be difficult to find many seats in any direction on the broad plain of the Preussenland, the great grain country, the bread basket of the Prussian Country. The flying field is on the side of the very firm which we approach and we land on the broad plain of the Preussenland, the great grain country, the bread basket of the Prussian Country. The flying field is on the side of the very firm which we approach and we land



Looking down on the Tyrolean Alps from a Deutsche Luft Hansa plane.

for our 250 mi. trip at the field, which is the southern border of our travels of Europe. Giving to the head wind, it has taken us four hours to make the trip, the speed averaging 60 mi. per hr. As the opportunity presented itself, we continued the journey onward unhesitatingly to Vienna, 250 mi. further.

Moscow has a dual system of airports, one for passengers and another, several miles away, containing hangars and sleep equipment for the servicing of planes. This second airport is used for night stops, and we have been arriving near the center of the city in the early morning and again giving some facilities for a large service station which will give a few minutes flight from the big service stations which are in the direct route of all Southern European air routes, so it is on the direct route of all Southern European air routes. The main road to Southern Europe now extends from Moscow to Leningrad, via Novgorod, Vologda, Archangel, Murmansk, through Finland to St. Petersburg. From here we fly to Riga, passing over Lake Ladoga and seeing the great factories of the Kegums and Dvinsk and Maykop aircraft companies. To the north of Moscow, there radiate to all cities of Germany, while the route to Vienna beyond the Black Forest, through Prague, Budapest, Hungary and Bulgaria extends as far as Constantinople.

#### The Most Scenic Air Trip in Europe.

South of Moscow lies the Tyrolean Alps. They form the most attractive portion of Austria for scenic and photographic travel. The mountains are an extension of the Alps. At last we left Moscow, flying westward, Italy to the south. The capital of the district is Innsbruck, to which our air line flew from Moscow. The plane used is a Fokker III, carrying four passengers and powered with a B. M. W. engine. Two round trips a day are made, one in the morning and one in the afternoon, the return trips, taking passengers being made directly from Innsbruck. The distance is about 180 miles and the beauty of scenes and interest grows in the short period of two hours, the most fascinating air passes can be imagined.

The soaring plane leaves Innsbruck at eight o'clock and takes a course up the valley of the Inn river. Low hanging clouds, the mountains rising steeply on either side, the sides of the valley itself, the world seems to shrink. It is therefore necessary to fly low, sometimes at 10 or 15 feet, less than 20 feet. The high mountains are under way like the clouds that can be conveniently seen through rifts in the clouds.

On the morning that we made the trip there was a cold snap, and as the temperature was 40° F., we had to leave the plane in the mountain clearing. Between the cities we landed on the river, the last landing incident in central Europe the estates and villages that occupy mountain locations at every meadow patch along the valley. Our small town surrounded a hill, on top of which was a fortification camp. Bloodily after the battle with the Romans, the fortification camp was thrown the village and to the sky cleared the plateau went up to 5,000 ft., so that we could have a complete view of the range.

#### Innsbruck, the Mecca of the Tyrol.

A beautiful hospice was located by one of the old valleys as a sign, of which something should be said later. Our morning view would be that of numerous villages and mountain towns, famous waterfalls and cleaving deep in the rock. By nine o'clock we had reached the valleyn in the valley, over which the city of Innsbruck spreads its perfume and unspotted beauty.

A very satisfactory supper has been had, and a landing here recommended by passengers, since the wind later on would be high, and we are more in better view of the surrounding peaks than that those who arrive in the more peaceful way.

The pilot on this route is Rothko, one of the most famous professional pilots in Germany. For several years he has flown this very difficult route without accident. He is not only skilled as a pilot, but has a perfect technical knowledge of the art. He is the man of pilot that the tourists never need fear, and it is not that he is creating a new expression, which

may become as famous as its remote prototype—“A pilot with a girl at every port.” On the morning that we landed at Innsbruck, a letter was received from the agency at the hotel, which stated that the weather was so bad that local authorities had forced them to close their doors every day.

It is customary to make the round trip by air from Moscow to Innsbruck on the same day. As the capital of the Tyrol is reached at nine o'clock in the morning, and, as the general where place of the big houses at five o'clock in the afternoon, we have time for the famous games of the hotel which were Andrew. Hotel games for rich people and also the Castle of Andros, situated in one of the most beautiful locations in the world.

Day is learnt making the trip to, of course, suspended for the return journey and keeps a keen eye on the very changeable weather in the mountains. Rather anxious as on our arrival at the field, still, while there were many clouds on the mountains he would take the short route directly over



*Bailey shot by Major Gossom while flying over the Alps.*

the peaks. After taking off, we followed the valley for a few miles, growing altitude continuously, and we finally reached 9,000 ft. Within four minutes we had reached the snow line and the marvellous view of the Tyrolean Alpine range extended to the west. While the view down to the valleys the type of landscape we were to see in the Tyrol. About two miles above Innsbruck, in a valley comes down from the north and up the Tyrolean side. Looking down we could see the winding roads and automobiles climbing slowly up the mountain side to cross the pass. Within a few minutes we had reached the top, and were in sight of the first of a series of paved mountain tops, with big grooms sweeping down the slopes, while in all directions, as far as the eye can reveal, the snow on the mountain blazed with the plants of the sky to give a most unusual picture that never can be erased.

At St. Gerold we had never heard of the name before, I enquired before leaving, and was told that in a view of the first time possible landing field for safety around was in the snow. He replied that the beauty of the scene was so great that it took away all sense of fear. The crossing of the mountains takes only twenty minutes, and, as the mountains rise sharply from a high plain, the view is most impressive. The first time across the border of Italy to the south, the first time range of Innsbruck to the south.

Two mountain lakes of the highest blue imaginable add to the attractiveness of the elevated and the lower which flows from these lakes almost directly to Munich. For the first time in my life I had the opportunity of seeing a complete rainbow. The sky was clear, the sun was out, and a rainbow, which might have got up on canvas for a painting, World to enjoy. The trip back to Munich took a little over an hour and, like all other passengers, who had the opportunity of flying over the mountains, we were more than

(Cont'd on page 484)

## The New Fokker Army Bomber

*Of Conventional Fokker Construction; Carries Crew of Five Men  
And is Powered With Two Pratt & Whitney Wasp Engines*

**A**T TETTEBORG AIRPORT, adjacent to the factory of the Atlantic Aircraft Corp., Hartsbreak Heights, N. J., the new Fokker Army Bomber XLD-2 was recently flown for the first time. Apart from changes in the engine and the addition of a fifth crew member, the smaller Bredt and Leimannisch Bredt and Leimannisch on three transverse flights. Unlike the other large Fokker planes, the heavier is mounted by two Pratt & Whitney “Wasp” engines. The fuselage differs in that instead of the central engine there is a greater cockpit in the nose. Accordingly a larger space is available for military equipment and for the pilot's seat.

A crew of five men is carried. Two are stationed behind the large bomb compartment under the wing, and the other three in the forward part of the fuselage. Attached to the cockpit at the nose of the fuselage is a shield mounted for two machine guns, one on each trigger. The tail section is slightly to the right of the central compartment. It is surrounded by an omnidirectional glass window offering excellent vision in all directions. Slightly to the rear and above the heavier's compartment are the two pilot's seats, fitted with dual side by side controls. The cockpit is open, though it is expected that later it will be enclosed. The seats are so arranged that either pilot can get down to the lower compartment to sit at his controls.

**Practically No Blind Spots**

In the rear of the fuselage behind the bomb rack and just aft of the wing is a compartment in which two members of the crew perform the duties of gunner, radio operator or photographeur. At the top of this rear compartment are two machine guns mounted on a sliding barrel mount. The gun mount is arranged so that the gun can be fired normally downward, or it can be tilted diagonally. Aiming of the gun is effected at the bottom of this compartment to fire through an opening in the floor. In this way these machine guns can cover almost every direction, leaving practically no blind spots. It is said that the large wing monoplane type offers a great advantage in this respect, due to the absence of a lower wing, which in all types “blinds” a large part of the lower surface. The XLD-2 has a large upper wing, which is in radio, and provision has been made for the installation of a camera for air reconnaissance work.

Rearage to the forward cockpit is made through an opening in the bottom of the fuselage. A discharge holder is provided on this opening in spite of distance above the ground.



*Front view of the new Fokker twin-engine (Wright Whirlwind) monoplane bomber now being used by the Army Air Corps.*

**NATIONAL AIR RACES, SPOKANE, WASH., SEPT. 23, 1927**

# The Western Air Express

By EARL D. OSBORN

**W**HEN IT was first decided to extend the government's air mail to the West Coast it was quite natural that the route should go to San Francisco. At that time it was considered probable that the next step would be to run a line by a northern route to Seattle and another route through the South to Los Angeles but when the time came to let the route to San Francisco go to the public the W.A.E. line in its original form was too costly to start three major continental air mail routes out and it would be better to split the transcontinental line at Salt Lake and run one branch to the Northwest and one to the Southwest. The wisdom of this decision has been proved by the success of the two branches. The southern line is called the Western Air Express and it runs from Salt Lake City, Utah, to Los Angeles, Calif., a distance of 600 mi.

## Regularity of Operations

The most salient feature of the Western Air Express is the extraordinary regularity of its operations. The line was opened for schedule flying on April 17, 1926, and during the following year approximately half a million miles were flown, including test flights and work on the mail route. In 1927, so far, the number of miles covered for the party's operations, only nine were delayed; two of the delays being due to engine failure and seven being due to bad weather. This is probably a world's record for regularity of operation of a line of such length.

The chief revenue of the company is from the carrying of mail, although passengers are also carried. During the first year fifteen passengers were carried. This figure will be approximately 250 in. of mail a day or 175 lb. in each direction. The mail is drawn largely from the neighborhood of Los Angeles and a very considerable part of it is supplied



Leading Captain Orman's plane with air mail at the Los Angeles Airport, by the moving picture industry. The W. A. E. also carried 350 passengers. Several special charter flights were made but thus end of the business has not had developed in a large way.

The route of the air line has over dozen waters and periodically marshaled sections. The route is in fact so long that it was some fifty miles longer than the rest of the country to cover the distance. Thus no California flight of the route has even a very broad and irregular valley part of which is flat and part of which is very hilly and broken up by small streams. At times the line of flight arrives the place over some rather high spurs of mountains but for the most



Harry M. Roseton, president and general manager of the Western Air Express.

part the places are within gliding distance of valleys which are more or less level. The average base of the flight is six hours and twelve minutes. The best time was four hours nine minutes and the shortest, six hours and forty minutes.

Most of the flying is done at an altitude of over 8,000 ft. and as the engines are run at comparatively slow speeds (1450 rpm.) their life and reliability are considerably increased. The weather over the route is the same as in the mountains. The weather is different over the Los Angeles peninsula where there is more rain in every field and makes take off and landing difficult. In the mountain regions high winds are encountered and over the coast, riding columns of heated air make the going very bumpy. During the winter snow storms occur but except for this the visibility is almost always good.

## His Own Hangar at Salt Lake

Nearly thirty fields have been cleared along the route so that emergency landings can be made without trouble. Besides the main fields at Salt Lake and at Los Angeles there is a field at Las Vegas at which a regular stop is made. At each of these fields there is a wireless station for weather reports and progress reports on the planes. The planes themselves, however, do not carry wireless equipment.

At Salt Lake the company has its own hangar which can house three or four planes. All the overhead work is done at the Los Angeles field. The engine overhead shop is not very large but the work has been placed on a regular production basis and the shop is held in a very orderly condition. The planes are overhauled after every 200 hr. This is a long period between overhauls but the engine is built to last and is guaranteed for reliability by the high affidavits and accompanying manufacturer, and partly by the fact that the engines are kept identified way down below their maximum power. The record for reliability of the W. A. E. could not have been accomplished however without the very best of maintenance and thorough reconditioning of the

engines. In fact before the engines were put into service nearly a thousand dollars was expended for new gaskets, steel backed bearings and many minor refinements. Some of the larger engines cost \$1,000 each and the smaller ones \$200. As the amount of flying done is very exact, the cost of the engines goes in a very even manner, one engine being replaced about every two weeks.

So far there have been an average of major overhauls and the maintenance at the planes has been done at Los Angeles. A very useful job in gasoline consumption is made and by putting over the records the number of miles which the planes are functioning properly and whether the planes are keeping them properly throttled down. When a plane comes in after a flight it is immediately prepared for the next trip. The planes are very thoroughly inspected and if the maintenance mechanics have any extra time they go to work cleaning the planes. As a result the planes always come in as if they were in fine condition and the passengers feel something to do, and there is not the appearance of粗糙 and dirty which is so prevalent at most airports.

## Mr. Roseton Fondly in Automobile Business

Horris H. Hammon who was formerly in the automobile business in the West Coast section of the country Major C. G. Moody, of racing fame, was president and supervisor the flying operations. The radio manager is James G. Wadley. There are eight mechanics. Four photo in 90 per cent of the flying. They are Maurice Gleason, Alvin DeGarmo, "Jacobs" James and Fred Kelly. There are also two reserve pilots. Gleason and DeGarmo both consider themselves mechanics and are experts in repairing all types of aircraft. Gleason is an expert in aircraft and a research engineer. The average time over the route has been faster than that of any of the other planes. The pilots of the W.A.E. average nearly 30 hr. of flying a month which is a very high seasonal. Flying, however, in this case duty and expense of making repairs they have nothing to do with the maintenance of their planes. In fact, when not flying they are urged to stay away from flying.

It was found that traffic was the most problematic element in the operation of an airline and every effort was put toward its development.

Under the direction of the traffic manager, Mr. Wadley, the service of

Chambers of Commerce, rotary clubs and other service bodies



Successful photograph of a W.A.E. mail plane in flight.

was initiated, and a campaign appealing to the primitive of Southern California was started. The results were most successful. Every business was canvassed, and all hotel and stationery shops checked for aeronautics and travel agents were approached.

Southern California has already been won over. The rest of the country has not yet but the western part of the United States. As a result, almost from the very beginning there was very considerable loads available. The possibility of mail showed a steady increase throughout the year.



Left to right: Al DeGarmo, Maj. C. G. Moody and Captain Orman just before the take off from Los Angeles on the first nonstop flight of the air mail on April 29, 1927.

with a notable jump at the time when the air mail uniform rate was established. Traffic however can only be worked up from the Los Angeles end for as there is no town there but Los Angeles itself and the people are not great enough for the traffic to be well developed. The Los Angeles end is the greatest part of the passenger traffic has been from Los Angeles and as we are unable to admit passengers from the main terminal down from Salt Lake. The planes going out almost invariably start on time but the west bound planes must wait for the government mail plane from the east, and if there is bad weather between New York and Salt Lake the plane is apt to be delayed. The mail plane has been most remarkable in that it has forced many trips to be deferred which of course is a great detriment to passenger service.

The taking over of the San Francisco-Golden Gate line by the Boeing company which has the very best of equipment should increase the regularity of arrival of the transcontinental service at Salt Lake and therefore help the W.A.E. Work has been begun on the eight hundredth of the Salt Lake-Los Angeles road but the San Francisco-Golden Gate line from Chicago to Salt Lake at night, it would not be advantageous to start night flying over the W.A.E. route until a daylight service is put in between Cleaves and Salt Lake. The W.A.E. is also launching a passenger service between Los Angeles and San Francisco, and though plane and rail tickets they may not prove effect in carrying of passengers between Salt Lake and Los Angeles.

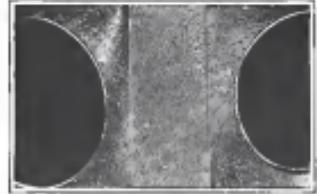
## Seven New Gas Cells for the Los Angeles

The first of seven new gas cells for the new string "Los Angeles," now being constructed at the Goodyear Tire & Rubber Co., Akron, O., will be completed and delivered in Lakewood Air Station during August. It was announced recently that the Goodyear construction department. The other cells will be ready to enter service before September. An experienced service leader and releasing device for the Los Angeles is now under construction at Goodyear for the Navy Bureau of Aeronautics, and tests may be made during the early Fall.

# Duralumin—Defects and Failures

By LIEUT. COMDR. WM. NELSON (C.E.) U.S.N.

**O**NCE OFF the advantages of metal over wood as an aircraft material in the weight and strength of the metal. There are no shades, shades, bright, or gray, also, in metal; and, as a consequence, aircraft failures were as less looked forward to the use of duralumin with other. Their hopes were not entirely confirmed at first reached from the inherent property of durability of having more apparent



Bubbles sheet fully relieved by over-heating at the heat-welding operation.

defects than real ones and from the anomalies in the features of the metal. Experience with this aluminum alloy since its introduction to aircraft has tended to set the house in order so that the idea that it is a perfect material has advantage mentioned in recognition of a fact of importance.

It is proposed in this paper to identify some of the defects and failures in duralumin most frequently encountered by the aircraft industry with a view to reduce their importance. Some of these have been reported, whereas, on the other hand, several others have not been found for use in aircraft members in aircraft. To distinguish one from the other is not always quite as simple as it seems.

The defects and failures so described as may be classified into the following groups:

- (a) Defects produced during manufacture of the new material
- (b) Defects produced during fabrication of the material
- (c) Defects due to use
- (d) Corrosion and rusting.
- (e) Fatigue failures.

Only the first two will be covered in this article since each of the others are far too important to be given other than detailed attention.

The methods of manufacturing duralumin have been so standardized and so rigorously controlled by the practices of the industry that the defects shown are relatively few. However, effects by the products in research and in manufacture have been reflected in the material produced so that at the present time the causes of most of the defects occurring are known, and corrective measures are adopted before the material is distributed. However, duralumin is not all that aircraft designers and manufacturers would like it to be, nor is the product always to be classified as good, for in spite of the many advantages of duralumin there are still some difficulties which sometimes require to make decisions regarding "use of the metal."

As is known, duralumin is usually rolled, excepted or extruded form, and in various conditions of thereof invested. The rolled duralumin usually leaves the mill with a ribbed surface, such a surface being produced by the rolling opera-

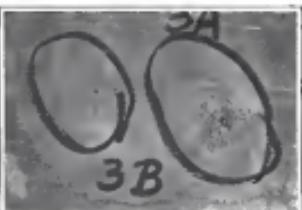
tions. The wrought and extruded forms do not as a rule have the granular appearance, being flatter and presenting more even surfaces.

Perhaps one of the most widely discussed, partly regarding duralumin sheet at the question of natural references. This natural value in its surface appearance from a clean surface gray to a dirty gray with all colors of the rainbow intermixed. The clean silvery gray resembles a machined piece in color, whereas the dirty gray can be described as dirt mixed with the surface. When heated from a high angle heat can cause bubbles to be seen on the plowed surface very frequently occurring at times in a spot and wandering suddenly at other times. These have been described as a copper shot. It has been definitely ascertained by numerous tests that these of these qualities has any bearing on the physical properties of the material nor is the shade of gray a measure of the quality of the material. However, the presence of stains or discoloration are accompanied by variations in the surface. These imperfections are usually the result of contact with some foreign substance after the material has left the mill. Duralumin as marked should not find its way into circuit under any circumstances if the surface imperfections, other than the color, are observed.

## Raw Material Inspections

The imperfections reported on duralumin in the raw state, aside from mechanical properties and laminations, cracks, pits, dots, scratches, batteens, blisters, slivers, roll marks. Most of these when observed, give little effort to be the physical properties of the material, but are caused by other reasons indicated as they do more or less damage to the material itself only by the use of a microscope or the X-ray.

Laminations occurring in a pack of a sheet or sheets have been more frequent in the past than in the case now. Practically all of sheets resulted in a condition where the finished sheet should be separated for a considerable area into two halves with an lead between the two. Fortunately this defect occurs in the edge where it is readily detected in inspection;



Boring imperfections in a duralumin sheet. The photograph is slightly magnified.

but there are cases where the sheets have fused together as well. That laminations were not found until the plowing operations had been completed. Laminations have also been found in rolls, being due to metal in the extreme block carrying over to the next following extrusion. It seems unnecessary to state that laminated duralumin is not suitable material for aircraft.

Cracks in sheets and other rolled shapes are due to the temper of the material or to pulling of the rolls. Cracks in

the kinds of rolled shapes may be due to the thickness variation of cross rolls a being beyond the range to, i.e., the natural. Cracks in extruded shapes are usually found at the ends and corners of the sections, and are usually due to the warping. Clustering of the die or an imperfection in the die used for extrusion causes a series of cracks readily discernible in the finished product. Although these defects are not admissible in duralumin in general, cracks in tubing should be ruled

they are extensive as part of the sheet or shape is acceptable. The complete endurance of sleeves to heating or grinding requires the removal of considerable material, resulting in a reduction of the section available for the part affected.

If it is believed that blisters should be segregated into two groups, those resulting from overall heat treatment and those resulting from overheating of the metal. Blister on duralumin is the best classification here as effect on the mechanical properties of the material. These blisters are small and not frequent. Blister, that is, when they appear in a localized manner, are a natural indication of changes in the microstructure and inferior physical properties accompanying such burned metal.

## Overheated Gas Flame Blisters

In the course of the manufacture of duralumin it is not hardly to be expected that all overheated gas in the vapor is driven out. Naturally then, a certain portion of the gas will find its way to the surface or near the surface in a sheet or shape. Upon leaving the duralumin for long continuance this gas will tend to expand and in some cases blister. Heat treating the metal at temperatures above 500° F. will not remove the gas completely, but the smoothness of the sheet is restored. It is to be presumed that sheets displaying a tendency to blister can be killed first prior to the final welding. Blisters on badly blisters sheet have been subjected to reduced pressure and the indications are that no combination of pressure and the blisters is effected.

On the other hand, if duralumin is heated to a temperature from 500° to 600° F. there is apparently a change in the constitution of the metal. It is this change which tends to weaken the joints and induces in related derivatives. Blisters due to doses or plasma substances picked up by the rolls subsequently reflected onto the metal, will appear from time to time and unless the source is removed no dies results need be expected. Changes does not continue in these parts nor is the resistance index increased. It is to be noted, however, in this case the increase of the resistance may not be perceptible. As a matter of fact, pits and cavities are not cause for suspicion unless the quantity or frequency warrants such action.

Scratches come through handling of the material. They are not deep enough as a rule to do other than mar the surface, but they leave a heavier or continuous and fatigue failure.

Corrosion will immediately along a certain of the passes and will be most pronounced in the last pass. It is to be avoided whenever practicable off, welding or drawing.

Manufacture of aluminum alloys now go in great length to reduce mechanical abrasion control by enforcement of lighting and it is well if standards take equal care to retain the plowed surface.

## Buckles Appear in Sheet Stock

Buckles appear in sheet stock in spreading after heat treatment. These buckles are wiped out by the straightening roll which is the last and greatest power to pass through. Buckles in plates never occur in fabrication parts therefore aside from the effect on appearance.

Buckles may show their appearance as extruded discs, rivets, or taken from the sheet as a flat sheet on the sheet. Discs are formed even in the rolling operations and often due to the direction of rolling and reduced width due to the sheet. The cause is due to rolling of plates of aluminum or duralumin which are piled up by the rolls. Extrusion of the weight or amount of the working of the die results in a silver. Material left in the character of an extrusion serves as a previous mold makes its appearance on the extruded shape as a silver or a thin shell. All types of fibers reduce the value of the product for general use and in case

of buckling will be avoided as soon as possible. These marks destroy the continuity and uniformity of the plate and should not be used in aircraft. They are removed by successive drawing of rolls or by defects in the roll surfaces.

Tool marks and scratches in duralumin come primarily from the methods of fabrication used. Careful handling and working should be avoided as much as possible.

Oil spots are sometimes received with a lot of surface scratches and are due to the method of heat treatment only duralumin coils. The coated sheet are usually heat treated in the soft heat by having an aluminum wire wrapped the various layers of the coil. This aluminum wire apparently causes more or less picking of the sheet while it is in the bath. The passed methods have eliminated this defect.

Welds are sometimes made with the edges notched and extruded with certain types may note where the edges does not. The most common cause of the manufactured rivet as received to crack the head. Where cracked heads are found and the head is broken it is nearly as impossible to weld getting some hole the finished aircraft, for as a rule the cracks are so fine that the instant care is necessary to see there is a defect. In generally all rivets as they are now made there is a small cavity in the center of the head which is round. This may not exist or not be a source of trouble, but it has been noted to indicate corrosion tests that this will be overdriven

more severe than the other parts of the aircraft. It is desirable for the aircraft manufacturer to concern himself in the question of coated wire surfaces.

The most common serious defect is dislocation along folded coated wire parts in a crack. These cracks are primarily due to stretching the material by working it too long, too soft, or too hard. They are frequent on parts driven or pressed or sheared and caused in some few very severe cracks to complete parting of the material. Should such an event occur, the wire should be cut to the broken end of the wire and bent back to its original position. The use of the cracks or their frequency determines whether or not the material can be used for the purpose intended. In some rare cases the con-



A wire mesh from the surface of an aircraft is a disastrous defect. (Photograph highly magnified.)

sistency of the material is responsible for the cracks but in most cases it is due to the design or to the shop processes. Sheets usually show cracks if at all at sharp bends. Wrinkles may show cracks at sharp bends at any part that has been worked too soft. Metal propellers should be inspected with a magnifying glass to be assured that no cracks exist. Ensuring durability of a coated wire solution will tend to make cracks less apparent and to a practitioner accustomed to his specific purposes in forgings.

Buckles, bolts, rivets and tool marks in darkness are other defects that occur in the fabrication of parts. Scratches and tool marks are largely avoidable by proper use of hand tools. No particular advantage appears to rubbing thin sheet metals with sharp tools or steel wool.

#### Rivets Can Be Prevented

Rivets can be prevented by coating the part in air or in water instead of water or oil. Rivets will set the most easily in the case of moist rapid cooling when no pressure is applied to cold water. The working out of rivets within a short time after the heat treating operation is a common practice and is not known to be injurious to the metal. However, the use of rivets in aircraft construction on smooth surfaces would be of great advantage from the appearance point of view. With the present methods to see, the rivets as they sheet out obviously are open to criticism and appearance objections that future maintenance is possible in a wire coating.

In discussing the question of rivets further, it might be mentioned that defective rivets are, as far as the aircraft manufacturer is concerned, rivets that have been driven through the heads of the rivets and are completely dislodged. This is another fault associated with rivets which demands attention as seriously weak and to the question of lifting up the sheet holes. Correct hole-size and rounding are es-

sential. The complete driving of the rivet so as to fill the hole is the best way to obtain strength. The first objection with properly heat-treated cases is considered to be good. In general, practically anything within reason can be done with sheet metal even though a clean job is usually the result of the case that should be taken to the place of assembly work.

A defect readily produced in aluminum by the worker is that of bending the metal by using too great a moment of force. Drawn wire which has been so bent will not straighten and will not serve any useful purpose. The previous section is dependent entirely on the correct coating during the treating operation.

#### Proper Heat Treating Essential

When the aircraft designer specifies aluminum for a part it is done with a view to having material that comes up to certain physical or mechanical values. It is therefore demanded of those working to fit designs to produce the final parts with all operations leading toward that ultimate. Perhaps the easiest place in which to do this will also the desired results necessarily as in the case of having properly heat treated drawbars in the final assembly. Annealed and cold worked drawbars will both have a tendency to become brittle and transverse cracks are likely to appear in the case of the annealed aluminum bars. It makes no rigid inspection. The simplest arrangement is to check the parts by means of the telescope. Properly heat treated and aged drawbars will give a transverse hardness of about 25 whereas the annealed material will give a value considerably lower and cold worked slightly higher. To be more certain than the hardness values need not be used. Some tests should be conducted with the hardness tester.

Drawbars which have been heated in the furnace treatment are readily removable to the eye. Extreme brittleness is a noteworthy feature in material which has been too hot. There is no recovery for a brittle piece of drawbars.

In conclusion it can be stated that the amount of damage rejected due to defects and failures is not great compared to the quantities thrown out in other aircraft materials, but there is nevertheless the possibility that an aerodynamic engineer will be compelled to pay the price and the financial sacrifice is essential that due diligence be exercised by them in control of this feature.

#### For Ladies Only



The Chicago Flying Club has a women's auxiliary called the Women's Aeromobile Club. The organization is the largest women's auxiliary in the country. The name of the auxiliary is derived from the organization's motto, "Women in flight." The organization has been in existence for over ten years. Mrs. Compton is shown here with others during the time of the 1926-1927 season.

PRACTICE WHAT YOU PREACH — USE THE AIR MAIL

## The Gordon Bennett Balloon Races

Sixteen Entries Representing Eight Different Countries Will Race for Internationals Trophy at Detroit, Mich., on Sept. 10

ONE OF THE greatest international events of the year is to be held in Detroit, Mich., Sept. 10, 1927.

For this year 16 free balloons bearing a gas capacity of 1,200,000 cu. ft. and representing eight nations will "take the sky" in the sixteenth annual contest for the Gordon Bennett International Balloon Trophy. The contest is to be held in America this year, due to Wade T. Van Ostrand of Akron, Ohio, winning the 1926 event, the name of the nation giving the name to the trophy. The name of the preceding year is retained the contest for the following year.

The entries for the 1928 class, as announced by Ray Cooper, general manager, and United States, 3; France, 3; England, 1; Spain, 1; Germany, 2; Belgium, 1; Switzerland, 1; and Italy, 2.

This is the first time since 1923 that German balloons have been represented in the race. And the fact that Austria is honored by being appointed the starting place for the 1927 contest, she will also have the honor of maintaining foreign diplomats, who will come to this country as representatives of the nations having entries in the Gordon Bennett Races.

#### Three American Entries

America this year will be represented by Wade T. Van Ostrand, winner of the 1926 Gordon Bennett Trophy, and the Young National. Van Ostrand, however, will not be allowed to retain the title of the American representative in the 1928 Gordon Bennett Race. Van Ostrand is perhaps recognized throughout the world as the outstanding balloonist, and in America's hope of retaining the coveted trophy. The second entry will consist of E. A. Hill and A. G. DeLoach of Detroit. The third entry will be a combination of the Air Corps and the United States Army. The third entry, however, during this year, the men will have the support of the U. S. Army, maintained in the Army Balloons as a member of the service, and will be piloted by Capt. W. E. Kroske and Lt. Col. Y. K. Edwards. The Army entry finished third at Akron, Ohio, in 1926.

Although balloons have been in use for over a hundred years, it is a noteworthy fact that amateur competitive ballooning originated in 1898. It was in that year that the late James Gordon Bennett, an American, was the catalyst of the Aero Club de France, the first trophy bearing his name.

#### Distance is Winning Factor

The first contest for the Gordon Bennett Trophy was held on Sept. 30 of that year, and was won by Louis Frank J. Lakin who flew a distance of 600 miles from Paris to London. The second Gordon Bennett Trophy, which the contestants have held, has not been changed since originally drawn up, and the endurance programs are such certain teams may have three entries, having an air capacity not exceeding 60,000 cu. ft. each. The time in the air, officials say, are not factors in determining the winners, but the distance traveled is an absolute factor. The records under these three rules have been stayed each year, with the exception of the time between 1922 and 1925, when it was deemed advisable to discontinue competition of the particular nature, because of the World War.

The rules of the Board of Gift for the Gordon Bennett Trophy provide that the trophy is to be loaned to the permanent property of any nation, the nation which will be won during three consecutive seasons. The contest this year is for the second Gordon Bennett Trophy. The first Trophy was won by Ernest Desvergne of Belgium, who was the winner in the 1922-1923-1924 classes. Because of the wonderful achievement by Belgian, the people of Belgium purchased



Wade T. Van Ostrand, American balloon champion, making use of a mobile control.

a trophy, by popular subscription, and entrained it to the Aero Club de France, to be accepted for under the same conditions as the first trophy.

In preparing for a contest of this kind, there is a great deal of skill and preliminary work. The Field Airport, which has been leased by Henry Ford for this year's race, is a huge flying park situated just at present, because of man who has been given permission to use the field, the director of the race, and several experts are engaged creating a series of grand stands for the occasion which will satisfy chronic audiences should be a grand success.

A new \$5,000.00 in racing balloons replacing the \$1000.00 which was the winner of the 1926 and 1927 Gordon Bennett Trophy, will be used by W. T. Van Ostrand and W. W. Morris, Goodyear pilot of Akron, in the 1927 contest.

The "Goodyear" V-12, the newly-manufactured racing big has been completed, will compete with all improvements in the airframe and engine. The engine will be built by the Goodyear aeronautic organization in more than 25 hours' aggregate.

Of single place contestants, the record of America's premier racing pilots will probably be the lightest balloon ever to represent America in an Internationale event.

The radio compass and the navigator's sextant will again be employed as navigation devices by the Akron men in the Goodyear V-12. The Akron men believe that the Goodyear team that the race in first place in the last National Race was largely possible through the use of these pieces of position finding equipment.

Van Ostrand expects to use the 17-pound radio receiving set which has been with him in his contests since the 1924 National Race from San Antonio, Tex., which he won.

On his various trips to Europe during the last five years,



# Aircraft Trade Notes

## N.A.C.A. Publishes Pilot Test Report

The National Advisory Committee for Aeronautics has published report No. 264, entitled "Differential Pressures on a Helium Type Pilot-Sensor Tube," by C. E. L. Dyer and R. M. Dyer. The report contains measurements of the differential pressures on two NACA air-speed sondes, consisting of a Zahn type pilot-sensor tube and a SQ-56 two-pronged pitot-static tube. The tubes were placed in a tunnel simulating the free speed of wind at various angles of pitch and yaw between zero degrees and 180 deg. The results show that for a range over 20 deg. to +20 deg. pitch and yaw, the



National Advisory Committee for Aeronautics air speed wind tunnel test.

Stated air speeds varying from the calculated speed at zero degrees vary slightly over two per cent, for the Zahn type and about five per cent. for the SQ-56 type.

For both types of air-speed sondes the indicated air speed increases slightly as the tubes are pitched or yawed several degrees from their normal zero degree attitude. At attitudes around zero plus or minus 35 deg. to 20 deg. the indicated air speed increases more rapidly than the calculated air speed, to

an angle of 90 deg. to 180 deg., and then decreases again rapidly from 180 degrees to plus or minus 180 deg.

The complete variation is dependent on speed for the two tubes over 20 deg. pitch and yaw is graphically presented in figures.

For the same air speed and zero degrees pitch and yaw the indicated pressure of the Zahn type pilot-sensor tube is about one-half that of the SQ-56 type two-pronged pitot-static tube.

Report No. 264 may be obtained upon request from the National Advisory Committee for Aeronautics, Washington, D. C.

## Wide Use of Perry Austin Dopes

The Perry Austin Mfg. Co., of Gloucester, S. I., N. Y., glaziers, in the manufacture of airplane wire dopes, have at their workshop and on most of the planes which make the record flights.

On the Loening Amphibian, which made the 18,500 mi. Good Will Flight in South America, this company's Clear Acetate Dope, as understood, and the Imperial Tape, as tapecote, were used on the fabric. The Wright-Bellanca

monoplane, in which Clarence Giesecke and Charles A. Loran flew to Germany, and the Fokker monoplane in which Claude Richard E. Royal made his trans-Atlantic flight, and Louis Lester J. Mathord and Albert Hegenberger in trans-Pacific flight, also used the Perry-Austin dopes.

The Voisin "Cavala", in which an altitude and three speed records have been established employed this wireless dope.

## Report on Friction of Aviation Engines

The National Advisory Committee for Aeronautics has published Report No. 265, entitled "Friction of Aviation Engines" by W. B. Strohmeier and M. A. Kline. The purpose of the report is to conclude that: (1) Changes in friction due to changes in temperature of the air entering the engines are negligible. (2) Changes in friction which result from changes in atmospheric pressures are due primarily to changes in gasdynamic laws. (3) The increase in friction resulting from a decrease in engine operating rate is due to the decrease in engine load. (4) For speeds from 1,000 to 12,000 rpm, the friction coefficient increases with speed. Ordinarily the percentage increase is less than the percentage increase in speed. At low engine speeds the friction coefficient drops much less in speed and in some instances practically remains constant. (5) Friction depends upon the viscosity of the oil upon the cylinder walls.

(6) The increase in friction with compression ratio is very slight.

The second section of the report deals with measurements of the friction of a group of planes differing from each other in a single respect, such as length, diameter, area of thrust face, location of thrust face, etc. Results obtained with most types of aircraft are given and compared with direct measurements to the fact that the friction characteristics of planes depends upon policy design as well as upon drag design.

Report No. 262 may be obtained upon request from the National Advisory Committee for Aeronautics, Washington, D. C.

## New York and Western Airlines, Inc.

New York and Western Airlines, Inc., Rochester, N. Y., has been incorporated under the laws of the State of New York for the purpose of transporting passengers and freight and conducting related business.

John C. Murphy, president, holds the operation of a 300 acre field, known as the Rose-Patterson Field where the flying service and instruction are now being carried on daily.

The officers and directors of the corporation are Capt. Merrill K. Shidcock, president; E. Rock Douglas, secretary; Charles B. Chapp, treasurer; James Thompson, director; and Dorothy Martin, assistant secretary. The executive office is located in the General Building, Rochester, N. Y.

## Western Aero Firm Partnership

Lorraine Engineers of the Nebraska Travel Air Service Co., North Platte, Neb. associates a partnership with Otto R. Bialik. The company is engaged in the sale of Travel Air planes, commercial flying and instruction and also conduct as airplane service station, doing emergency repair work.

PRACTICE WHAT YOU PREACH — USE THE AIR MAIL

## TEN YEARS of LOENING PIONEERING

1917 - 1927

TEEN years ago — on August 10, 1917 — Grover Loening and Henry M. Crane founded the Loening Aeronautical Engineering Corporation.

In the decade that has passed, this organization, always original in its designs, has pioneered many outstanding types of airplanes, beginning with the first rigidly braced monoplane, the record breaking Loening two-seater fighter of 1918 which carried that type of monoplane, now so widely used, to a high degree of success.

Several years later, in the Spring of 1921, the first American monoplane flying boat appeared — the Loening Air Yacht — a novel type of plane, disclosing the Loening form of wood frame, metal covered hull construction and combining for the first time a unit hull and body.

The first Loening Amphibian was flown in 1924 and since that time the Loening organization, with its corps of skilled craftsmen, its wealth of experience and its fine plant facilities, has concentrated on this type of airplane.

As a result American Aviation therefore boasts of the World's finest Amphibian, — proven by service in the Arctic, in the Tropics, around South America, in the Philippines, Hawaii, Panama, China, Alaska and all over the United States.

**LOENING AERONAUTICAL ENGINEERING CORPORATION**  
(Founded 1917)

31st STREET AND EAST RIVER, NEW YORK CITY



By Special Arrangement with the Automotive and Transportation Divisions,  
Bureau of Foreign and Domestic Commerce

### Russia Built at Marneval

A narrow air mail line has been opened at Marneval, Czechoslovakia. The stage of the running is about 980 ft. from the longest. Its direction is WNW., or against the direction of the prevailing wind. It is 730 ft. long, the width at the beginning being 24 ft. and at the end 80 ft. In order to assure safety in the event of a side wind, it is planned to have a landing field at Marneval, this being roughly treated and fit to pass antarctic, other aviation fields in Czechoslovakia will be equipped with similar runways. The cost of the entire aviation field at Marneval was \$90,000, or approximately \$70,000.

### Paraguayan Air Mail

An air service between Paria and Buenos Aires will be inaugurated before the end of 1927. Delivery of mail will be made within 5½ days as compared with the present eleven days in 2½ days. A combination airplane, engine, fuel and chassis only will be used at first to insure safety. The mail will be carried in a small box which will be received by air, and the trans-Atlantic stretch by rail stages between Asuncion and Yvonne, Cape Verde Islands, and Portuguese Islands off the coast of Brazil. Airplanes will be used from Paris to Dakar, seaplanes between Dakar and Cape Verde and Maracaibo, and seaplanes from Maracaibo to the Parana River. The telephone company hopes that radio development will have progressed by the time that the trans-Atlantic leg can be covered by air within a year after inauguration.

### Imperial Delegation in Peru, Australia

The work of the Imperial Antarctic Delegation which recently arrived in Peru, includes the location of a suitable base for the operation of the proposed seaplane service between England and Australia. A special plane was engaged for this purpose, which enabled the mail mail sites to be located with the minimum of time and expense, and with a greater degree of accuracy than would have been possible by means of ground transport and inspection.

### Plan to Link Empire with Hong Kong

The linking of Hongkong with the British Empire is being planned by the Air Ministry of Great Britain. The main feature of the scheme is the construction of a trans-Atlantic air line which will be used by the proposed English Airlines service via Singapore and via a route far north to China, Japan and the Philippines. The present plans are confined to the completion of the land connection and the sea will also be bridged by a typical shelter and buoy air plane. Advice is being sought from England as regards the creation of the necessary linkages.

### Landing Field at Laramie, Canada

An aeronautical landing field has been established at Laramie, Canada, about 160 mi. south of Edmonton. This field will land on nearly 100 acres of land of the Bowring Taylor and Harvey Department, the air surveying and engineering section of the department. The survey will consist of a series of the points extending from Bowring to Kinsella on the Canadian Pacific Railway line, through the fifth mountain to the west and Stettler and Cochrane to the northeast. It is expected that the work will take place in 1928. It is established the completion of this work there will be three established landing fields between the United States border and Edmonton, the one at High River being the first established and from

which point all air operations in the west, such as surveying and forest fire control, can be made.

### English Australia Flight Planned

Six South African aeroplanes will fly from England to Singapore, via Durban, in 1927, to lay out a route. Two of the planes which will be used will remain at Singapore, the air line for the east, and the four others will proceed to Port Darwin, Australia, and make a circuit of the continent by the north-east, west, south and east coast back to Port Darwin, and then return to Singapore. The total distance which will travel will be 10,000 miles. Some routes are being designed and courses to be laid by the Supermarine Aviation Works, Ltd., of Woolston, Southampton.

### Europa Organization Progresses

According to a recent report on the activities of the Amalgamated Transport and General Workers Union, the Europa organization of 2,000 members, with 22,000 local branches. This society has established 50 large airports.

### France-Romanian Air Line

The Franco-Romanian Line, "Compagnie Internationale de Navigation Aérienne," has begun its regular summer service between Constantza and Paris, via Bucharest, Bulgaria, Bulgaria, and Vienna, with departure once a day.

The German company, "Westdeutsche Luftfahrt," which was to have established a line from Berlin to Constantinople, via Vienna and Sofia, Bulgaria, may not be able to start operations this year. It is attempting to obtain franchises from international carriers.

### Japan-American Flight

A flight from Japan to America, probably by way of the Aleutian Islands, is being planned, the Imperial Aviation Association announced at Tokyo recently. The flight will consist of the Rikkyo, a 100-hp. biplane, the maximum weight of 1,000 lbs., and a 100-hp. motor. These planes will travel at a speed of 120,000 feet per minute will be offered.

### German Pilot Sets Twentieth Air Record

A report from Germany states that on Aug. 1, Hermann Steinbrecht, German's pioneer and one established his twentieth record for distance. At the start of his flight he had 1,000 lbs. of fuel. At the end of his flight he had 100 lbs. Steinbrecht took off within 30 sec. in a perfect radio. It is stated that during the day's flight the following records were established. Ten thousand kilometers with fuel load of one ton at a speed of 160.5 kmph., 10,000 km. with load of one-half ton at a speed of 200.9 kmph.; total distance of 10,000 km. covered with 2,000 kg. of useful load.

### Berlin-Görlitz Air Line

A commercial air line between Berlin and Görlitz, the capital of Silesia, has just been inaugurated. The trip is made in 9 hrs., 45 mins., including a stop of 3 hr. at the intermediate stations. The flight from Berlin to Görlitz is made in six hours, and the remainder of the trip is nonstop.

### Santiago-Valparaiso Air Line

An aeronautical line between Santiago and Valparaiso, Chile, has been opened. The operating company is a French one, but the planes are the Morris Biplane type, with 125 hp. engines.



## Again the Wright Whirlwind Motor with Bohn Ring True Bearings Scores a Triumph

The Woolaroc piloted by Arthur C. Goebel, winner of the \$25,000 Dale air race from Oakland to Hawaii, and the Aloha piloted by Martin Jensen, winner of second place, were both equipped with Wright Whirlwind Motors in which Ring True Bearings were used for both the Master Rod Bearings and the Crankshaft Rear Bearing.

In every major air race of recent months Bohn Ring True Bearings have played their part in bringing the flight to a successful conclusion and placing America in the forefront of aviation progress and achievement.

**BOHN ALUMINUM & BRASS CORPORATION, Detroit, Michigan**

Also makers of Bahnite Castings  
and Nelsen Safety Pipe Fittings.

**BOHNALITE**

# AIRPORTS AND AIRWAYS

Rochester, N. Y.

By Joseph F. Fawcett

Rochester is planning an aerial exhibit in conjunction with the annual Rochester Experimental Equipment show, Aug. 30 to 31. Plans are now under way and several aviation organizations have been invited to exhibit their products. The exhibit, the first of its kind in this part of the state, is being sponsored by the Rochester Flying Club and the Rochester Municipal Museum. An entire floor in the massive building will be given over to the exhibits.

Comparable exhibits have been mounted through the advance publicity given the exhibit and it is expected that nearly 10,000 visitors will stream from all parts of New York State as well as neighboring states and Canada. According to records the expectations in the past years have fluctuated between fifty thousand and one hundred thousand visitors.

Other exhibits from around the country include the Republic Company, which will have a display of several sturdy and modern types of aerial cameras; Clark-Kang Aerial Service, and North Star Aerial Service, Inc., displaying two Taylor monoplanes, one fully completed and one in sections.

The Aerial Exhibit Committee, of which Guelden A. Taylor is chairman, has invited the public to call at the Rochester Flying Club, 100 Franklin Street, to inspect the exhibits on Friday evening, Sept. 3. There will be no charge for admission, but the cost of the exhibits will be to admit and place them in the building. Applications will be received by the

Secretary of the Flying Club at 36 East Main Street, Rochester, N. Y.

## Hadley Field, N. J.

A radio-beacon has been installed at Hadley Field, sponsored by the General Electric Co. The installation consists of a steel tower 90 ft. high, tilted at a 45° angle to the ground, and directional radiators. A smaller building 23 ft. by 17 ft. has been erected at the base of the mast. The transmitter in one low, like unit similar to the apparatus used for the business of the Lighthouses Service, modified by the installation of a generator and automatic sending keys for the interlocking system. These tests have been made and the apparatus has been tested for operation in the presence of parallel and interfering radio beams. The radio installation began in May, arriving at Hadley Air Mail Field, making it possible for airplanes equipped with radio receivers to determine their position in the field under conditions when bad visibility prevents flying with safety.

The General Electric Company has developed a radio receiver for the Lighthouses Service to be installed on the east end of the tower and in the building to receive the radio-beacon. The receiver is 16 by 22 in. in size, 3 in. thick, weighs 10 lb., and is the first commercial development of a suitable airplane receiver built especially for air mail planes whose responsiveness, stability and weight are important factors. An

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Engineering Division at Rochester, N. Y., or write  
to all G-E sales offices.

**GENERAL ELECTRIC**

August 29, 1937

AVIATION



## A Message to Airline Operators and Aircraft Manufacturers

**AUSTIN ENGINEERS** have had intimate contact with aviation building problems from the start, and realize the necessity of providing properly designed hangars, factory buildings and other structures at low cost.

In years to come fancy architectural treatment and costly embellishment of hangars and other aviation buildings will be justified, but just now economy must rule.

Austin Engineers have developed several very economical standard types of hangars, the designs of which were evolved after more than 10 years study of the peculiar housing requirements for ships. Not only every type and kind of housing for airplanes,

but also thorough study and design of desirable housing and manufacturing requirements have come within the scope of Austin experience.

Austin will design, construct and equip hangars, factory buildings and other structures under a guarantee covering total cost, completion date and quality of materials and workmanship, or Austin will furnish complete plans and specifications and deliver steel and other essential materials for erection by a local builder anywhere, with a decided saving in time and expense.

Write, phone the nearest Austin office, or mail the memo for a copy of "Austin Builds for Aviation" folder and approximate costs.

**THE AUSTIN COMPANY, Engineers and Builders, Cleveland**  
New York, Chicago, Denver, Portland, Philadelphia, St. Louis, Seattle, Toledo, Miami  
See Austin Company of Texas, Dallas; The Austin Company of California, Los Angeles; see President

# AUSTIN

Complete Building Service

Memorandum to THE AUSTIN COMPANY, Cleveland—

We are interested in

Your Building and Airport Consulting Service  
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preparations have been made for the testing of the radios and the airplane receiver. These tests will be in progress during the next month. The department's program for radio business will be based on the results obtained from these trials. This work will be completed in cooperation with the Commercial Air Transport, Inc., operating as the New York-Boston Airways, the Air Mail Service of the Post Office Department and the Army and Navy.

#### Lakeport, Pa.

By Roy Dunphy

The Longview Flying Service has leased Nepper Farm, an acre plot of Somerton, Pa., and will operate the field regularly all year. The field is well known to cross-country fliers and is used also by the Army.

Joe Coates, chief paramotor jumper from this field, is operating his practice jumping in Illinois and Washington. He is accompanied by Wink Lenz, a student jumper.

A. H. Koenig, of Pittsburgh, Md., has demonstrated his Challenger plane here which he expects to put into production soon.

Chief George Levy, out of the Flying business for seven years, is coming here at long last and expects to fly for us on what he agrees to offer the school.

#### Airports Prepared in Numerous Cities

The American Branch of the Department of Commerce has announced that the following cities are either considering the establishment of an airport or have taken steps toward it:

Baltimore and Baltimore A.M.; Fort Smith, and Frisco, Okla.; Fresno, Calif.; Kansas City, Mo.; Louisville, Ky.; Los Angeles, Calif.; Milwaukee, Wis.; Minneapolis, Minn.; Newark and Newark, N.J.; Washington, D.C.; Wichita, Kan.; and Waco, Tex. The airports at Boston, Mass.; Little Champaign, Illinoian; St. Louis, Mo.; San Antonio, Tex.; Seattle, Wash.; St. Paul, Minn.; Toledo, Ohio; and Worcester, Mass., are also being considered. The new airport at Kansas City, Mo., where La Guardia, Whiteman and Beckford have indicated their interest, already has

been chosen. October, Greenfield, Lawrence, Lowell, Boston, New Bedford, Fall River, and Worcester, Mass.; Bay City, Mich.; Cleveland, Detroit, Grand Rapids, Kalamazoo, Lansing, Muskegon, Saginaw, and Toledo, Ohio; Indianapolis, Indiana; and Milwaukee, Wis.; Des Moines, Iowa; Oklahoma City, Okla.; Omaha, Neb.; Portland, Ore.; Salt Lake City, Utah; St. Paul, Minn.; and Spokane, Wash. Other cities mentioned are Albany, N.Y.; Buffalo, N.Y.; Chicago, Ill.; Cincinnati, Ind.; Denver, Colo.; El Paso, Tex.; Fort Worth, Tex.; Hartford, Conn.; Indianapolis, Ind.; Kansas City, Mo.; Louisville, Ky.; Madison, Wis.; Milwaukee, Wis.; Minneapolis, Minn.; Newark, N.J.; New Haven, Conn.; Oklahoma City, Okla.; Omaha, Neb.; Portland, Ore.; St. Louis, Mo.; St. Paul, Minn.; Toledo, Ohio; and Wichita, Kan.

#### Airway Surveys

The survey of the Atlanta-New York airway is now in progress, the Hudson-New York route having been completed. The Salt Lake City-Pasco airway has been completed and the Los Angeles-San Francisco airway is in progress under W. T. Miller, surveys extending northward through the mountains of the southern part of the route, leaving deferred until the end of the year. Los Angeles selects the site for its second airport.

#### Field at Yorktown, Va., Not Available

The U. S. Army strip near "Baltimore-Washington-Norfolk" and the experimental "Washington-Hopkins" strip at the U. S. engine reparation plant show the old field at the U. S. Mail Depot, 6 mi. west of Yorktown, Va., is not available. The Army and State Dept. know little about the field. Due to the fact that P-12 is now kept at this depot in open storage, the field is no longer available for landings and aircraft are prohibited from flying over the area.



THE STINSON MONOPLANE, WINNER OF THE FORD TOUR  
Powered with Wright "Whirlwind" 225 h.p. Engine

Equipped with

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Aircraft Magneto

SCINTILLA MAGNETO COMPANY, INC.

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SIDNEY, N. Y.

#### Cincinnati, Ohio

By R. Alvin Hag

Sgt. P. A. DeWitts, who has been periodic patrolling of Mason Airport, Blue Ash, for the past two seasons, has just established a new delayed parachute jump record of 21,400 ft. in height. When he landed, he reported to a Hotel there. DeWitts stepped from the wing at an altitude of 23,000 ft. and did not open his parachute until within 400 ft. of the ground. The speed he was making in his fall was so great that when he pulled he reported the chute was torn in two. Several days later he made a trip to the Infantry School at Buffalo in order to make a series of aerial flights in the high-speed range. Just about a week ago DeWitts established a delayed jump record of 15,000 ft. DeWitts would like to break this by falling 17,000 ft., without opening his chute. Not satisfied with this he has hung up the new record of 23,000 ft.

John M. McGrath, Assistant Secretary of Commerce for Aviation, is a visitor to the city and made an address before a group of pilots and city officials at the Queen City Club. He stated that the air mail includes Louisville and Cleveland, which includes Cincinnati, will be started about Jan. 1 or shortly thereafter. The government is looking for airmen to help in the airmail service and will undoubtedly be using a regular salary for them, and that will undoubtedly be cause a regular salary. A hand sum of \$600,000 for the improvement of Lunken Airport will be voted on by the people in the coming election.

The United Cigar Stores' flying tobacco shop paid a three-day visit to Cincinnati recently, stopping at Lunken Airport. The men in charge of the shop visited a great deal of attention. We may not be far from the day when it will be possible to buy cigars and cigarettes while flying in great all-around cities in sky.

The Murphy Flare, who operates Murphy Field on the Union Avenue, have been doing a good business throughout the summer. They are Waco planes, and also have a flying

school in connection with their passenger-carrying business. The field is being enlarged and modernized with new Run Moon planes, the result of his parading range. The Murphy Flare carries passengers on the general basis.

Captain Ogden, formerly stationed at Wilkes-Barre Field, has arrived in Cincinnati to assume command at Lunken Airport, previously Major Hoffman, who has been promoted to Major of Maintenance.

Local Highways has ten speedly Hensle Toward Air built on the field signs and is thickening the roads with dimensions of the speed of the plane. Weston reports that business is excellent and hundreds of passengers are being carried every Sunday.

#### Portland, Maine

The airport at Portland is rapidly assuming importance and will probably be ready for use in 60 days. It will have three runways, a hangar with space for eight airplanes, lighting equipment, a machine shop and an office building.

#### Springfield, Mass.

The Springfield Aeromarine, Inc., one of Springfield's two competing aviation companies organized this year, definitely got underway with the arrival here of two new biplanes. The planes were flown from the Brewster factory in about 21 flying hours by Leslie Miller, chief test pilot for the Aeromarine company, and Fred J. Scott, who has been engaged as pilot by the Springfield Aeromarine. All of the planes at the company's field at Agawam are now considered reliable as they the first Springfield ever seen here.

Pilotage enroute started soon after their arrival and Scott has been kept busy ever since with the demand for charting loops. The field which had been selected as the operating base, turned out to be too small for the number of spectators and the company had to move to the Russell Field in depositions, just across the river from Springfield. The

We could make cheaper airplanes, but they would not be Travel Airs.

We could charge more for Travel Airs, but that would not make them better.

Ask for catalog showing the various models.  
It's yours for the asking.

TRAVEL AIR MFG. CO., INC.  
WICHITA, KANSAS.





plane. Walter Ballock recently formed a Miss Ryan from San Diego to the Twin Cities.

Business at the field is increasing and a few of the stations are placing on planes of their own the air "superior" will be used more frequently.

#### Beringsham, Vt.

By John J. Baker

The field used during the Bemisberg Battle Springs-Catton well is located about a mile west of the Mountain, which rises as three broad feet above the hill on which it stands, the top being about twelve hundred feet above sea level.

The town of Bemisberg is located in a wide valley at the northern end of the Stetsonia mountains. The name Bemisberg means "the camp of the Bemis" and probably comes from the name of the great New England general. What may find this of value, as there are few points from which to check a course in these mountains.

The ground was marked with a few hundred foot white sticks, a wind rose placed upon a bone in one corner of the meadow and a storage house for gasoline was erected.

The first flight made by Captain Ford were pressed, one returning to Rutland after a stay of two days and the other two remaining in Bemisberg, putting in considerable time in the air. After the relatives they returned to Boston. Russell and Stetson brought a Waco-Saint to the field and were kept busy repairing passengers' little planes. Boston is a very good place to go over as it is the place to know about trip jobs and out of the field, which is rather rough and needs a lot of grading to take out the dead ferns. However, the plane, flown by Captain Stetson, did over the bumps easily and without any trouble.

Every effort is being made to secure for Bemisberg the field and we hope fields next to it. It is a good place for the village of Bemisberg, close to the summer resort at Old Bennington and also near the North Village. There is a long railroad running about a quarter of a mile from the field.



Louis Billingsley, Vice President and General Manager of the Hawaiian Airlines Inc.

**First and Second-in the Hawaiian Flight**

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MARTIN JENSEN'S BREESE "ALOHA"**

were equipped with

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best airports in the New York district. The field superiors would like to hear from any responsible organization that wishes to locate close to the metropolitan district. They would like to have a committee to work with us in interested. The address of the Bemisberg Aviation Field, Inc., is Jerome Avenue and 147th Street, Bronx, N. Y.

The officers are: Major William P. Briggs, president; Louis Billingsley, vice-president and general manager; Hugo White, treasurer; Frank Ripp, secretary, and George May, second vice-president.

#### Milwaukee, Wis.

A request that a committee be selected from the membership of the National Aviators' Association to be an advocacy board to collaborate with the mayor and president of the corporation in drafting regulations for flights from Milwaukee field will be made by E. C. Johnson, secretary of the harbor commission. The committee will consist of five members, three of whom will be qualified pilots.

Another committee will be appointed to see that the rules are carried out. This group will inspect the places operating in and around Milwaukee and give favorable publicity to the city.

When the M. Carpenter Baking Company commenced with Dan Kline to establish the Hobart bread plant, the company set a precedent in delivering bread in this manner. The company recently put a new brand on the market, namely Hobart, and when requests for it came from all over the state the word got around that it had been delivered to the same stores and individuals. So they were the first place to be placed on bread delivery service in the United States registered, with Miller Knechtel as pilot and now the deliveries are in full swing.

As a means of demonstrating the practicability of aerial transportation, the Aloha Airlines Inc. No. 25 of the American Legion, has arranged a Wisconsin tour and will make stops at various points of the state. The airplane will stop off from Milwaukee late in August or early in September and will cover about 600 miles. The tour will be a three day flight with landings at Sheboygan, Racine, Green Bay, Appleton, Oshkosh, Winona, Monroe, Janesville, Beloit, Kenosha, Madison and Fond du Lac.

Doubtless Americans that Milwaukee would be interested in the new air express service soon, to be started by the American Express Co., and that all air mail transportation services offered in the United States would be available in Milwaukee, are the opinion of Col. T. M. Devitt, vice-president of the National Airlines Inc., who will operate the passenger and air mail lines to and from Milwaukee.

It was also announced by Col. Devitt, that a report from the United States department of commerce indicated that the air between lights between Milwaukee and St. Paul would soon be completely mapped, making it a logical route for the transcontinental air mail line between Chicago and St. Paul and Milwaukee will soon be in readiness, he stated and all this area will be illuminated for night flying.

"Staten Mission"—The Hawaiian aerial conception, which placed second in the National Airplane Reliability Tour a month ago, has completed its tour of the Hawaiian Islands. The plane, which had been in the air for several weeks, unloading a set of portions and the divided product was taken to the Makaha Airport six weeks. Thomas F. Hanlon, head of the concern and owner of the plane, will, however, in a few days, plan for a test flight.

#### Boston, Mass.

By Donald Redfield

Boston's need to promote trans-Atlantic flying had increased to one fifth of its proposed total of \$25,000 Aug. 20, one week after no landing. The plan is to give the first plane heading to Boston from Europe at the British Isles provided the pilot first makes forced entry by cable to the Boston Chamber of Commerce and the Committee of Trade and the railroads, and goes with him are Louis Albert Hirschberg of the regular Army, W. Irving Bidell, and Walter S. Bowles, Boston businessman.

The Boston Airport Corporation is now flying the women of the 1925 Ford Reliability Team, chief pilot S. E. Bellings-

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# Side Slips

By RICHARD B. PARSONS

Mr. P. H. B. sent me the following letter, which he found in his mail recently. He didn't include his own comments on the letter, but it seems obvious that he wants us to warn the reader of the magazine to be on the lookout for a gyroscopic glider which may be making down for a landing day after day.

*Dear Sirs—*

Would you be interested in buying or flavoring a machine, the prototype of which is as follows:

"It'll stand as nearly upright as a bird."

"Can fly at all speeds up to a rate of forty thousand feet. Obtain a speed of one or 60 miles an hour."

"Practically no engine heat. (Less than twenty cents a day while in operation.)"

"Very few frictional parts to wear out."

"Can be handled easily by a child or novice, without damage to body."

"Can land in a space forty feet square or less."

"By intricate maneuvering can make thirty miles an hour against the wind."

"Can make it stand at an angle of over twenty five degrees without damage to parts."

"Can make it stand on its tail, which is about the same as a P-51, and the future looks like a good education."

"Can land on either water or land."

"The weight it can lift is unlimited, in proportion to the plane."

"Has a very high climbing speed."

"Distance it can travel is also unlimited. With a few supplies

I personally predict that it would be flown anywhere that sea routes take us."

"My personal prediction is that this type of gyroscopic glider can be made, by the right people, an popular as the Ford is on the ground. The production of former flying gliders using this type of glider is unlimited. If you are interested, I would certainly be glad to have from you, or if possible, talk at our place."

"I will add that one of the questions you doubtless will ask, was I a proud possessor of a model of that machine, and was unfortunate enough to set it for an altitude climb, and the wire with which I had it fastened for the test, broke, and to this date I have never heard any report of its coming back to earth. I am reasoning that it just kept right on traveling. The date on which I lost the model was somewhere around February, 1926."

The recent great popularity of aviation in general, and trans-oceanic flights in particular, with the newspaper reading public has led many to believe that "popularity" means that the number of which are capable of interest, however. One of the fallacies of those is open before me now, in a page bearing an article on "The Foundation of Flight." The article is illustrated with a picture of Mr. Orville Wright in one of his early models, which is labeled "Orville Wright in The Dawn of Aviation," and one of the following statements is added: "He could not fly because he was born from it."

"The statement (as I understand) was made shortly before the force of the air has time to pull it down."

"A monoplane has more lifting power than a biplane, because it is lighter. In a biplane, the lower part pulls the upper down with it because of the various effect."

"The biplane is heavier than the monoplane and thus always goes down to the earth."

"The ball and wings and other parts of the plane are built so as to increase resistance. This is why we have machines which enable us to fly to Europe in less than ten days."

## Amphibian Landing Gear Competition

In order to encourage the development of amphibious aircraft and to improve the efficiency of naval aerostation research, as contemplated by Act of Congress, Public No. 466, approved 2 July 1926, the Secretary of Navy invites the submission of competition, by sealed memorandum, of designs for Amphibious Landing Gear for aircraft.

Prospective competitors will be furnished identical specific information as to the conditions and requirements of the competition and as to the various features to be developed, together with the respective measures of merit that will be applied in determining the merits of the designs submitted in competition.

All designs and accompanying data must be placed in the mail and postmarked not later than midnight 5 December 1927.

Information will be furnished upon application to the Bureau of Supplies and Accounts, Navy Department, Washington, D. C.

T. W. LEUTZE,

Acting Paymaster General of the Navy

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## PUBLISHER'S NEWS LETTER

Occasionally a book marks us speak in honor of an audience. Usually, a new book is just another addition to the sum total of the store of human knowledge. Of books there is no end. When the AMERICAN AIRCRAFT DIRECTORY made its appearance in 1926, it was decided that there was a demand for such a book. Until then it was a generalissimo policy of unclassified units without a consciousness of its own. When it saw the new book, it set to work, added its views, took note of the extent of its ramifications, and realized that it had at last become a part of the nation's business.

The New York Times is considered to be the greatest American newspaper. Its editorial news are read in all parts of the world in a record of American opinion. Reviews of books are usually segregated on a book page, but when the AMERICAN AIRCRAFT DIRECTORY was reviewed, it was realized that here was more than a book, it was a question of a book which was the cornerstone of the search industry. An editorial was written and placed in the most prominent position on the famous editorial page, a compliment that the publishers of AVIATION, who also gathered the facts of the aircraft industry, relied on them and published the AMERICAN AIRCRAFT DIRECTORY, greatly appreciate. Below is the editorial:

### Progress of Aviation

Both military and commercial aviation and competitive flying for high money prizes continue to keep their traditions as well as their triumphs. The losses and failures and disappointments are doubtless inevitable incidents in the development of a new means of transportation, exposed to so many perils. Yet the art and science of human flight through the air goes on making rapid and steady progress, especially in the field of commercial flying. A striking indication of this fact is the publication of the first "American Aircraft Directory." It is not set by the Aviation Publishing Corporation and contains a wide range of information including operating expenses, pilot, landing fields, flying schools, manufacturers, together with a great mass of other material well arranged, classified and indexed. If anybody doubts that aviation has come to stay, let him look over this volume of 126 pages. It is a work at once useful for reference and a digest of progress.

The AMERICAN AIRCRAFT DIRECTORY is the first compilation, geographically arranged, of the American aviation industry—the personnel and commercial flying services. The magnitude of the industry in the United States as reflected by the latest compilation in the AMERICAN AIRCRAFT DIRECTORY is in striking contrast to the same compilation. Because the services are widely scattered, it is not generally known that during 1926, long before the present wave of popular interest in aviation swept the country, there was in operation in the United States 433 commercial air services and transport companies, and that these companies carried 367,852 passengers, transported 50,570 lbs. of freight, trained more than 1,200 students and kept 1,144 airplanes in service. These activities, of course, do not include the operations or demands of the military air services.

The wide scope of commercial aviation activities is interestingly shown in the classified index of the Directory. Five leading headings fully described. There are 53 operating firms engaged in aerial surveys, mapping and photography. One hundred and fifty-four other organizations of claim to fame in the Military Wing are listed. There are 22 aerial circus and exhibition concerns, and in the newly developed aerial business of crop dusting by airplane, eleven flying companies are engaged. Some 350 operators carry passengers or freight by air. There are listed 66 balloonists, 23 seaplanes and 23 balloons of various types, covering a wide range of activity from the extensive long established flights, whose products are known the world over, to the small planes whose output is limited to ten or a dozen commercial flights a year. These figures are for states and cities and indicate the scope of officials, as well as the products of activities of the companies.

A compilation in the Directory shows 1,200 commercial planes in use on January 1, 1927. Airplane exports during 1926 are shown to have aggregated \$1,879,284 of which airplane motors represented \$561,958, airships \$107,095, and airplane parts and accessories \$145,150. In addition to the purely commercial aspect of American Aviation, the AMERICAN AIRCRAFT DIRECTORY presents a directory of governmental air activities and personnel. Information of the general administrative section of the directory is for the guidance of the educational institutions having concern with aviation. A list of 225 graduate, non-technical engineers and managers who have taken the aeronautical courses. There is a compilation of the American Aero of the World War, and a complete listing of recognized World and American airplane and balloon records.





**"A Signpost of Progress"**  
says **THE NEW YORK TIMES**



The American Aircraft Directory can be obtained in two bindings—in heavy paper the price is \$1.00 and in cloth, \$1.50. American Publishing Corporation, 210 West 37th Street, New York City.

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(Illustration illustrative in reverse)

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